

Rajat Vikram Singh

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I am a recent graduate with a degree in Software Engineering from Carnegie Mellon University. My program focused on teaching principled approaches to software development through a year long capstone project. I have experience with Computer Vision through my undergrad projects, past employments and coursework at CMU. With this combined background in Computer Vision and Software Engineering, I'm looking for full time positions in the field of Computer Vision.

Education

Carnegie Mellon University School of Computer Science (Aug 2015 – Dec 2016)	Master of Software Engineering <ul style="list-style-type: none">- Intro. to Machine Learning (10-601)- Intro. to Computer System (15-513)- Software Architecture (17-655)	<ul style="list-style-type: none">- Computer Vision (16-720)- Deep Learning (36-780)- Managing Software Development (17-653)
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IIIT Delhi (Sep 2008 – May 2012)	Bachelor of Technology in Computer Science and Engineering (Honors) <ul style="list-style-type: none">- Image Analysis and Machine Intelligence- Data Analytics
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Experience

Wazzat Labs. ¹ Hyderabad, India (Jan 2014 – Mar 2015)	Research Engineer – Computer Vision Designed a visual search engine for fashion e-commerce websites retrieving apparels visually and categorically similar to the user input. This got accepted in the Target Accelerator Program, 2014 ² .
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IIIT Hyderabad Hyderabad, India (Sep 2014 – Dec 2014)	Research Assistant – Computer Vision – Indian Digital Heritage Project Programmed an augmented reality app for Android, using Vuforia SDK to overlay discolored and damaged murals of Hampi (a heritage site in India) with its restored painted version.
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Informatica Inc. ILM Business Unit Hyderabad, India (Jun 2012 – Oct 2013)	Software Engineer – Java Wrote optimized installers for data intensive products in the Information Lifecycle Management business unit. Also responsible for managing and maintaining the complete CI infrastructure and builds. Constantly a top performer, winner of a spot award and the ILM Hackathon, 2013.
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GE Global Research Bangalore, India (May 2011 – Jul 2011)	Summer Intern – Medical Image Analysis Lab Wrote an algorithm to quantitatively analyze and score the results generated by the lab's vertebrae numbering algorithm using spinal MRI images as input.
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IIIT Delhi New Delhi, India (May 2010 – Jul 2010)	Summer Intern – Image Analysis and Biometrics Lab Developed and evaluated algorithms to detect video tampering by using digital image watermarking, bit manipulations and steganography.
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Skills

Programming Languages	C++, Java, C, C#, Python, Perl, SQL
Tools + Technologies	OpenCV, PCL, ITK Toolkit, Keras, TensorFlow, MATLAB, VLFeat, Android SDK, Android NDK, Oracle, MySQL, Jenkins, Maven, Perforce, Docker, Git, Gradle, Spring, Hibernate, Linux Shell

Publication

Hima Patel, **Rajat Vikram Singh**, Vidit Aatrey, Ramasubramanian Sundararajan, and Vivek Vaidya: **Automated Vertebra Numbering and Plane Prescription along the Spine Using a Multi Model Atlas**; 20th Annual Meeting of ISMRM, Melbourne, Australia, 2012.

Academic Projects

3D Object Reconstruction from Hand-Object Interactions Implemented the 2015 ICCV paper of the same title by Tzionas et al. for the Computer Vision course project. A symmetric, texture-less, feature-less 3D object was reconstructed from RGB-D images of the object being rotated by a hand. The end-effector correspondences were used to register the object point cloud.	Computer Vision (16-720) Course Project
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Transfer Learning for Object Recognition Transfer learned a Convolutional Neural Net on CIFAR-10 dataset by fine-tuning a VGG-16 Net pre-trained on the ImageNet dataset. Got a validation accuracy of 97.41% by tuning hyper-parameters and by data augmentation.	Deep Learning (36-780) Course Project
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Object Recognition using CIFAR-10 dataset Implemented and evaluated machine learning algorithms to detect objects in the CIFAR-10 dataset – SVMs, Neural Networks, Logistic Regression.	Machine Learning (10-601) Course Project
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Relevance Feedback using Gesture Recognition Conceptualized and implemented a search engine result optimization module to enhance the relevance of the search results. The query was reformulated based on user feedback gathered non-intrusively through head gesture recognition.	Undergrad Final Year Project
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A Mosaicing Scheme for Pose-Invariant Face Recognition Wrote an image mosaicing scheme for pose-invariant facial recognition algorithms. This was done by stitching facial images taken from multiple poses in the CMU PIE dataset to form a composite facial image.	Undergrad Image Analysis Course Project
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Supplier – Retailer Shrinkage Management, LH Ventures Worked with LH Ventures on a software development project in a team of 5. The focus was on learning how to manage software development, acquiring skills like project tracking, designing architecture, managing risk, quality and configuration.	MSE Capstone Project
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¹ <https://fashion.wazzatlabs.com>

² <https://corporate.target.com/India/about/Target-Accelerator-Program>